EFFECTIVENESS OF BRAIN BREAK EMBEDDED MINDFUL ART INTEGRATED LEARNING (BBEMAIL) ON ACADEMIC PERFORMANCE AND STYLE OF LEARNING AND THINKING

Synopsis

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Submitted by

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1.0.0 Introduction

In the present scenario, education plays a vital role in a human being's life because it helps in the development of positive attitudes, behaviors, many kinds of values and skills, the acquisition of knowledge, and the holistic development of learners. Education is a systematic process for achieving desirable objectives and goals. Many institutes focus on quantitative education, but today learners need a qualitative education that helps in growth and transformation. Without a qualitative education, learners can't create imaginative thinking, creative ideas, or solve their academic problems. They work as inactive learners and cannot increase their thinking ability. **The national education policy (2020)** placed a strong emphasis on activity-based, play-based, flexible, experiential, and discovery learning at the elementary level. It includes many activities like drawing, painting, different types of visual and performing arts, and outdoor and indoor games based on problem solving and logical thinking. The fundamental goal of multidisciplinary and holistic education is to develop all the capacities and abilities of learners, such as mental, physical, social, intellectual, moral, spiritual, and aesthetic. It also places a strong emphasis on eliminating any rigid boundaries between disciplines and on offering inclusive education to everyone. With the recommendations of the **National Curriculum Framework (2005)**, learning was changed from memorization to creation, and learners were taken outside of the classroom to further their education in a fun and stress-free environment. Its fundamental objective is to center knowledge around the learners. Teachers can use a variety of tactics and ways to deliver learner-centered instruction, and one of them is incorporating the arts into the curriculum.

In the present time, constructive learning is very engaging and cheerful, which inspires learners to be cognizant of their subject through unrestrained exploration and anxious observation. Learners search for origins while making links between various ideas and subjects through different art formations in mindful art integrated techniques. Learning through art can be a vital act at all levels of schooling. Mindful art integrated learning is very existential in creation and assembles every learner's responses with their emotional and imaginative intensity. The requirements of every learner vary with ability, age, stages of schooling, and social circumstances. At the middle stage, mindful art integration requires that it connect with all concepts so that it gets techniques for teaching and learning. It plays a very essential role in strengthening the learners' imagination, admiration, and curiosity. It focuses on

the positive effect of the skills connected to socio-emotional motor, whole literacy, and intellectual.

In the middle stage, learners expand to an important part of their day occupied by inactive behaviors. This behavior includes sitting in a chair, using a computer, reading books, viewing TV, and playing video games **(Hinkley et al., 2010, p. 66).** Some instruction and activities in the classroom are demeanor with less action and often need lots of concentration. During the period in the classroom, take some minutes to rest their mind and do some physical activities because brain and physical breaks take away from inactive instructions and activities. During this time, learners solve their problems and behaviors in the classroom. A lot of research is required to be done to particularly pay attention to the impact of active and inactive behavior, and many studies reveal that active behavior is more important to upgrade concentration and demeanor. A short time break with art integrated techniques helps to enhance focus to stay in the classroom and the behavior of the learners at the middle stage **(Howie et al. 2014)**. Brain break embedded mindful art integrated learning with learning and thinking style is a biological, developmental, and individual attribute that influences whether a particular teaching strategy works well for some learners and less well for others. **Dunn and Dunn (1993)** found that learning is a complicated phenomenon that is impacted by numerous variables. It is the process of interaction between a person and their environment. Reconstructing past events affects people's behavior and dispositions both individually and as a whole group.

The concept of a brain break has been around for a long time, but teachers have come to know its benefits for a long class or have started using it for the attention of the learners in the classroom. These techniques allow schools the opportunity to enhance physical activity without increasing ours and help increase cognitive development **(Egerest et al., 2019)**. The basic objective of the brain break embedded art integrated technique is to provide facilities to transfer learning activities and classroom activities to each other through learners. Most of the teachers like this technique because they say that the short-term activities construct a refocus in the classroom and a desirable change in the behavior of learners **(Weslake et al., 2015).** During the school day, the short 10 to 15-minute art integrated break provides learners with energy, proper concentration, and relaxation. These breaks connect the learners with classroom activities and engage them in the classroom. These activities become totally different from any boring academic activities. These activities integrated with academic activities enhance

focus, engagement, productivity, develop new social skills, and improve brain function **(Terada, 2018)**. Using this brain break embedded, mindful art integrated learning, and the learners may not only learn but also create their own knowledge and apply it in real life.

Mostly in the middle stage, learners sit and learn quietly. Some research has shown in the department of cognitive and neuroscience that activities and active learning engage and motivate learners. The ability of learners to learn is based on their deep attention in the classroom, and they can encourage and allow deep attention, but inactive sitting is not an appropriate way to learn focus and engagement in the classroom (Ostroff**, 2014).**

1.1.1 Brain break learning

Teachers are constantly looking for new ways to adopt successful classroom management strategies that will reduce disruptive behaviors and improve academic performance **(Sieberer-Nagler, 2016)**. Learners employ their behavioral self-regulation abilities to manage those favorable and unfavorable settings and interactions throughout the informal and unstructured periods. The variety of factors that educators must take into account and address to make sure pupils live up to learning and accomplishment standards According to studies, pupils who are sedentary for extended periods of time are more likely to participate in disruptive activities, including eloping and outbursts that could cause injury to others or destroy property **(Kariippanon et al., 2021)**. Recent years have seen a rise in the use of brain breaks, or opportunities for learners to walk around during class, as a technique for teachers to help their pupils become more attentive, engaged, and behave in socially acceptable ways **(Mazzoli et al., 2021)**. As it's crucial to shift and balance between inactive and active habits, teachers must control classroom time and offer brain break techniques **(Ma et al., 2014)**.

Brain breaks entail engaging in physical, mental, and emotional activities in order to stimulate the brain's information processing centers and break up the routine of receiving information to the prefrontal cortex, which is where problem-solving and emotional control happen **(Mazzoli et al., 2021)**. The definition that is the focus of the current investigation includes a teacher-initiated short-term and intermittent strategy or method to involve learners in an activity designed to raise physiological arousal and shift them from sedentary to active mode, despite the fact that many methods and definitions have been used to describe brain breaks **(Mok et al., 2020)**. The brain can

refocus and stimulate neuronal networks in the prefrontal cortex, where learning is connected to performance, when the body is moving in some way **(Desautels, 2016)**. During the school day, learners take short 10- to 15-minute physical exercise breaks called brain breaks. These movement-based brain breaks can be incorporated into classes or kept entirely independent from any academic material. They can occur in any size area, whether indoors or outdoors. The ability to learn new social skills, increased productivity, increased concentration, and improved brain function when integrated into academics are just a few advantages of taking brain rests **(Terada, 2018)**. Every day in elementary school, learners remain still for lengthy periods of academic teaching. These learners frequently become antsier or more fidgety, which can lead to increased off-task conduct and distracting behavior **(Goh et al., 2016).**

1.1.2 Mindfulness technique

Mindfulness is a skill that may be developed via attention and attitude training to any age students from primary to college level. Formal attention training occurs through regular meditation practice; informal attention training occurs when one deliberately attends to one's everyday internal and external sensations in the present moment. It has been demonstrated that consistent mindfulness practice enhances attention control, heightens awareness of both internal and external stimuli, and decreases automatic reaction in the behavioral, physiological, and emotional domains **(Chambers et al., 2009; Creswell and Lindsay, 2014; Garland et al., 2017)**. Mindfulness is defined as a talent and a way of being. It is the deliberate attention to present experiences with a nonjudgmental and open attitude **(Bishop et al., 2004)**. Additionally, via mindfulness exercises, one can cultivate attitudes of compassion, acceptance, nonjudgmental, openness and curiosity **(Crane et al.,2016)**. Thus, the abilities and mindsets developed during mindfulness practice promote a state of being marked by purposeful acceptance, attentiveness and awareness **(Bishop et al., 2004)**.

Theoretically and empirically, mindfulness has been linked to psychological well-being. Rumination, anxiety, worry, fear, anger, and other common psychological distress are all thought to be treatable with the components of mindful, which are awareness and nonjudgmental acceptance of one's moment-to-moment experience. Many psychological distress symptoms involve the maladaptive tendencies to avoid, suppress, or over-engage with one's distressing thoughts and emotions **(Hayes &**

Feldman, 2004; Kabat-Zinn, 1990).

1.1.3 Art integrated learning

Art Integrated Learning is a cutting-edge method of teaching and learning that guarantees efficient and enjoyable classroom interactions in order to hold learners' attention, motivate them, support their active participation in the learning process, and give them the opportunity to develop their thinking skills. According to **Robinson (2013)**, the definition of art integration encompasses three different concepts: learning through and with the arts, curricular connections, and collaborative involvement. The main focus of art integration is to incorporate diverse artistic disciplines within the curriculum in order to enhance learning through experience. Through the use of art-integrated learning, learners can be developed in a variety of ways, including through self-expression, critical thinking, creativity, learning retention, social skills, and the capacity to connect different subjects. According **to Hardiman, Rinne, and Yarmolinskaya's (2014) study**, art integration improved learners' retention. In order to successfully apply art integration in the classroom and achieve more positive outcomes, it is necessary to first train the instructors on how to incorporate art and its various forms into their teaching methodology.

The main focus of arts integration is to incorporate diverse artistic disciplines into the curriculum in order to enhance learning. It also offers a creative place for each learner to explore, experience, and express themselves, according to individual needs and preferences. With the aid of many artistic forms, arts integration ensures experience-based learning and the creation of one's own knowledge. Learners may find the arts to be enjoyable, but real integration only happens when the classroom fosters diversity, inventive problem-solving, risk-taking, experimentation, and learning **(Cornett, 2006)**. Art integrated learning supports learners in gaining conceptual knowledge in their academic subjects.

The promotion of art integration is a potent teaching strategy for meeting the requirements of learners in the twenty-first century. Learning about, creating, and conveying profound understandings of oneself, one's community, and one's world can be supported by teaching in and through the arts. **The Central Board of Secondary Education (CBSE, 2019)** has held discussions with a number of stakeholders, including school principals, teachers, NCERT, art professionals, etc., while keeping the

aforementioned in mind, and as a result, it has become clear that integrating the arts into education will improve learning. Thinking in a way that is natural to the learners is one technique to direct their intellectual powers. Because a teacher's thinking style is reflected in his or her personality and teaching style, it is a skill that should not be disregarded and should be taken seriously. Since it is unlikely that all learners will have a similar learning style, a child with a distinct learning style is likely to experience difficulties understanding what is being taught by the teacher. Therefore, it's important to recognize a learner's style at an early age. Every person would prefer to use their own style; however, it is crucial for the teacher to be aware of the learner's chosen style in order to maximize the learner's teach **(M. Ksoo, 2014)**.

It is acknowledged that problem-solving and creative thinking skills are necessary for all academic fields that learners study at all levels. As a result, when art and education are combined, children are able to employ art-based inquiry, research, and exploration, as well as critical thinking and creativity, to gain a deeper knowledge of the ideas. Additionally, because it allows learners to directly derive meaning and comprehension from their learning experiences, art integrated learning is a great contender for learners' experiential learning. Additionally, it will not only make the teaching and learning process enjoyable, but it will also positively affect the development of a number of life skills, including those related to communication, reflection, and inquiry, mind-conditioning that will increase self-assurance and self-esteem, appreciation for beauty and creativity, etc.

Researchers studied brain break, mindfulness, and art integrated learning in different contexts separately, focusing on different correlating variables, and the current study tries to uncover the combined effect of all three together.

1.1.4 Brain Break Embedded Mindful Art Integrated Learning (BBEMAIL)

The educational methodology known as Brain Break Embedded Mindful Art Integrated Learning (BBEMAIL) combines all brain breaks, mindful practices, and art integration to improve learning opportunities and support learners' overall growth. The objective is to provide children the chance to unwind, concentrate, and express themselves creatively, which can enhance their learning and thinking style, cognitive functioning, emotional health, general academic success, and academic performance.

BBEMAIL strives to provide a balanced and enriching learning environment by integrating brain

breaks, mindful practices, and art integration. In order to maximize learners' learning capacity, it is important to meet their cognitive, emotional, and physical requirements. This learning supports learners' holistic development by offering a variety of ways to enhance their well-being, creativity, and academic success. Additionally, arts integration has been defined as a strategy to support the efficient transfer of information and abilities from the arts to non-arts domains and to assist learners in making links across other academic fields **(McLaughlin, Burnaford, Brown, & Doherty, 2007)**.

Learners can take brain pauses in between learning tasks through the art integrated approach. Many mindful activities will be executed, incorporating brain breaks to create the best academic learning environment that sooths their style of learning and thinking, boosting their academic success. They are frequently utilized during class periods at school or when doing homework at home. Depending on what is required for each child, these activities might be either soothing or physically vigorous. Brain breaks are designed to change the neural networks that are active. Most of a learner's energy when they are working flows to certain areas of the brain.

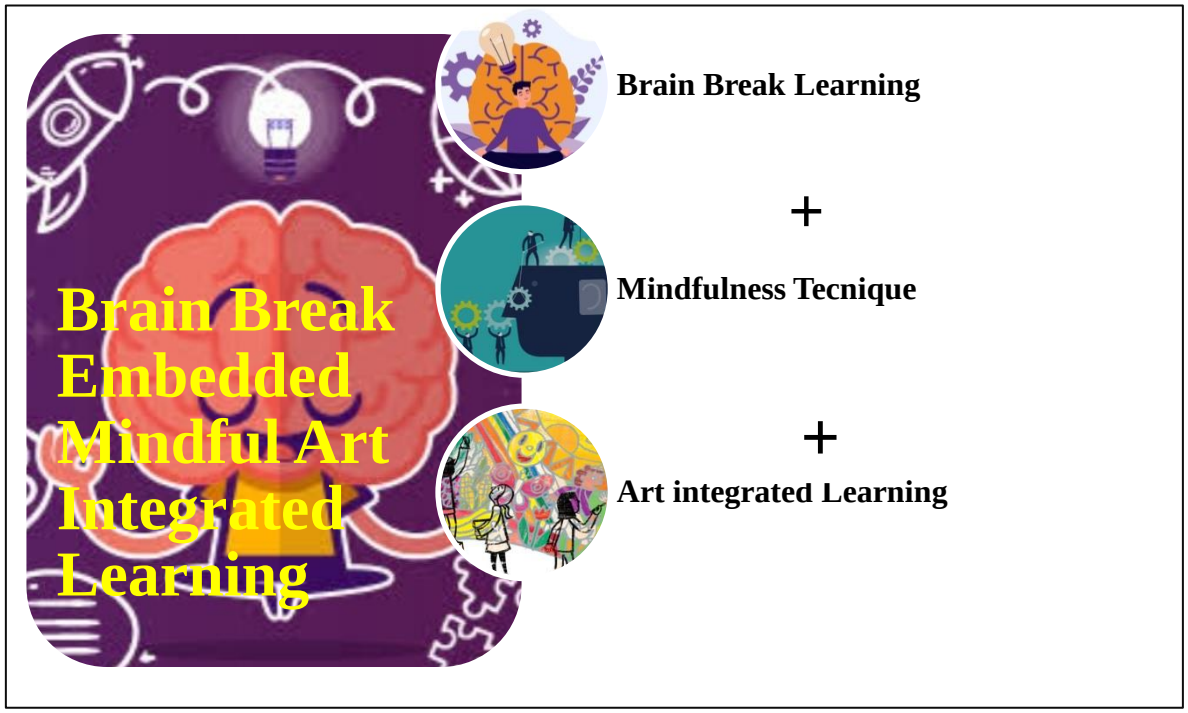

Figure 1.1. Showing a combination of Brain Break Embedded Art Integrated Learning

1.1.5 Academic Performance

Every educational level has a substantial impact on knowledge transfer and the development of cognitive skills. Given that it facilitates the transition from secondary to postsecondary education,

secondary school is regarded as the most significant period in a learner's life **(Kimani et al., 2013)**. Many studies have found that the concept of academic performance is difficult from the moment it is thought of. Academic performance is fundamentally understood to be the outcome of learning, which is stimulated by the instructional activity. **Marti (2003)** studied that variables including personality, self-esteem, skills, motivation, the teacher-learner connection, intellectual level, interests, or study habits can have an impact on a learner's academic performance. Diverging performance is defined as a discrepancy between a learner's academic performance and their expected performance. Unsatisfactory academic performance is any performance that falls short of expectations. Sometimes, it could be the result of using a bad teaching strategy. Academic performance influences how well students adapt. High academic performance has many benefits, whereas low academic performance may have negative effects on learners, teachers, educational institutions, and society at large. Poor academic performance at the secondary level compromises learners' prospects of acceptance into institutions of higher learning and exposes their possibilities of finding employment, which eventually reduces an individual's active involvement in national development **(Kimani, Kara, & Njagi, 2013)**. According to **Narad and Abdullah (2016)**, an educational institution's success or failure is based on the academic performance of its pupils. A learner's academic performance is determined by how well they perform on tests, exams, and course assignments **(Martha 2009)**.

1.1.6 Style of learning and thinking

Learning and thinking are closely related cognitive processes, but they refer to different aspects of mental activity. Most people exhibit a mix of these styles to varying degrees, and individual preferences can change in different contexts or as a result of personal development. Understanding one's own learning and thinking style can be beneficial for optimizing learning experiences and improving problem-solving abilities. Additionally, educators and mentors can tailor their teaching and communication strategies to accommodate the diverse styles of their learners. Along with attitude and conduct, learning style is a collection of several indicators or factors that support and control learners' learning in a certain environment **(Ellis, 2005)**. **Fatt (2000)** defined that learners can be equipped for the best of society and to handle real-life issues in this way. As a result, in order to achieve better results, a teacher must be aware of his learners' learning preferences. A smart teacher would simply

analyze the situations and comprehend the learner's learning preferences in order to address any issues that may occur during class.

Learning is the process of acquiring knowledge, skills, behaviors, or understanding through study, experience, or teaching. It involves the absorption of new information and the integration of that information into one's existing knowledge or cognitive framework. Learning can take place through various methods, such as reading, listening, observing, practicing, or interacting with others. It often leads to a relatively permanent change in an individual's knowledge or behavior. **Fatt (2000)** defined that pupils who have a learning style that is compatible with the teacher retain material better and have higher expectations for themselves as learners. The reason why pupils frequently perform poorly in school is that they are unable to deal with a variety of scenarios. According to **Lohri-Posey (2003)**, teachers might apply efficient learning tactics if they were aware of their learners' preferred learning styles.

Thinking, on the other hand, is the mental process of analyzing, synthesizing, evaluating, and manipulating information to solve problems, make decisions, generate ideas, and engage in abstract or critical reasoning. Thinking involves the application of learned knowledge and skills to a specific situation or task. It encompasses various cognitive activities, such as decision-making, problem-solving, creative thinking, logical reasoning, and critical thinking. Thinking is a broader cognitive function that relies on the knowledge acquired through learning.

Learning is the process of acquiring new information or skills, while thinking is the mental process of using that acquired knowledge to reason, solve problems, and engages in various cognitive activities. Learning provides the raw material for thinking, and thinking is the active process that transforms and applies what has been learned.

1.1.7 Emergence and Justification of the problem

In the present scenario, it’s true that in educational systems and situations, learners feel disengaged or burdened in the classroom because many educational systems prioritize grades and standardized testing as the primary indicators of success. This is an intense focus on results, where learners are more concerned about getting good grades than truly understanding and enjoying the subject matter. Learners often struggle to see the real-world relevance of what they are learning. When they don’t

connect classroom material to practical applications or their personal interests, they lose interest and motivation. Sometimes, the pressure to excel academically, whether from parents, teachers, or peers, leads to stress and anxiety. This makes learning seem like a burden rather than an opportunity for personal growth. When a teacher uses outdated or ineffective teaching methods in the classroom, it contributes to disengagement, but when that teacher uses engaging and interactive teaching strategies in the classroom that cater to various learning styles, it helps learners feel more involved and engaged in learning.

In the current scenario, educators are beginning to recognize the importance of addressing learners' cognitive and emotional well-being in the classroom. They are using many learner-centered activities and approaches like gamification, mindfulness, brainstorming, etc. Brain Breaks Included in the daily schedule of the classroom, brain breaks are quick mental or physical exercises that provide learners a chance to unwind, refocus, and recharge. By allowing learners to take a brief break from academic work, these breaks hope to improve cognitive function, attention span, and general wellbeing. Non-judgmental awareness of the current moment is referred to as mindfulness. It entails being aware of one's thoughts, emotions, physical sensations, and the environment around them. Studies have found that mindful techniques Art integration is the process of integrating several artistic mediums into academic topics, including visual arts, music, theater, and dance. It promotes independent thought, artistic expression, and cross-disciplinary learning. The use of art in the classroom can improve learners' critical thinking, problem-solving, and engagement. Learners can be used in similar non-traditional learning situations for essentially the same result as they would in a typical classroom or academic setting. Giving learners a quick break for socializing and having fun during class can boost opportunities and provide a fresh setting for improving teacher-learner connections. The relationships between learners and teachers in a classroom have a long-lasting and significant impact on learning, wellbeing, and development. By providing a new group activity, such pauses change the learning environment at school. These exercises have been proven to boost learners' enjoyment and good feelings in the classroom **(Howie et al., 2014; Vazou, 2014)**. Although there is no known research examining the direct connection between brain breaks and teacher-learner connections, rising evidence points to a positive bidirectional correlation between the two. According to **Hamre & Pianta (2005)**,

brain breaks can boost kids' involvement, and when children are more interested, they increase academic performance and thinking; teachers are too, which promotes healthy connections. Regular brain breaks can lead to favorable learners' outcomes such as intrinsic motivation, a positive impact, an enhanced classroom environment, and enjoyment, all of which have the ability to foster a caring learning community. Especially for less motivated learners, relationships with teachers tend to grow increasingly distant and uncomfortable as pupils advance through school **(Harter, 1996)**. Learners who are more active in their social surroundings have a more favorable opinion of their professors **(Skinner & Belmont, 1993)**. Therefore, brain breaks offer a potential means of shielding pupils from potential emotions of disconnection and low motivation.

The issue that surfaces is the necessity of successfully incorporating mindful and art into educational environments. Although incorporating mindful and art into the curriculum has been demonstrated to have positive effects on pupils, doing so can be difficult. Time restraints, a lack of training, pressure from daily evaluation tests, and resistance to change are a few challenges that educators may run into. To build holistic learning environments that support learners' mental health, creativity, and academic performance, this issue must be addressed.

A teaching strategy called art integrated learning blends art with conventional academic courses to enhance learners learning and engagement. It can foster greater communication, teamwork, and problem-solving abilities. From preschool to high school, mindful exercises and art integrated techniques can be incorporated into the curriculum. Doing so may enhance learners' cognitive abilities and result in structural alterations to the brain that supports academic achievement. It is suggested that mindful training enhances certain self-regulation skills that are essential for academic success. Giving teachers instruction and materials on art integration and mindful techniques can provide them with the knowledge and assurance they need to put these practices into practice successfully. Mindful and art exercises can be regularly included in daily classroom routines by being purposefully incorporated into the curriculum rather than being treated as optional extras. Stressing the value of learners' wellbeing and creativity as fundamental principles within the school's culture can help foster a welcoming atmosphere for activities like mindful and art integration. Working together with art experts, mindful practitioners, or neighborhood organizations can offer more knowledge, resources,

and assistance for putting these practices into practice. Schools can support learners' general wellbeing, cognitive development, and engagement in the learning process by tackling the issue of brain break embedded mindful art integrated learning in education. According to most research, learners who take part in movement breaks during a session have vastly improved attention and less disruptive conduct **(Camahalan & Ipock, 2015; James-Burdumy et al., 2013)**. However, conflicting evidence from the literature contradicts the assertion that activity breaks always improve learners' cognitive functioning **(Calvert et al., 2019; Daly-Smith et al., 2017)**. According to a more recent study, learners who took part in cognitively stimulating activity breaks improved their response inhibition at a pace comparable to that of learners working under controlled circumstances **(Mazzoli et al., 2021)**. The beneficial relationships are between brain breaks and focus, performance, and behavior in the classroom **(Walker, 2017; Podnar et al., 2018)**. The research also shows that after using brain breaks, teachers report improved focus and engagement as well as fewer behavioral issues **(Baker et al., 2017)**. Brain breaks encourage pupils to be active both inside and outside of the classroom, which is the physiological process driving this effect. For clarification on the precise conditions of usage, more information is required. While there is conflicting evidence, certain research on brain breaks has discovered that learners who actively participated in the activity had favorable behaviors in the classroom **(James-Brdumy et al., 2013; Chang and Coward, 2015)**. According to research by **Naimie et al. (2010)**, learners' success and happiness are positively impacted by the alignment of their teaching and learning styles. Learning style experts have validated the idea that allowing learners to employ their chosen learning styles will help them learn more and enjoy their time in class. Here, it can be shown that learners respond better to teaching-learning tactics that match their preferred learning styles. Collaborating with learners and incorporating different learning styles into the classroom setting can increase the importance of learning for everyone.

Thus, after exploring the research and issues related to brain break embedded mindful art integrated learning along with the academic performance and style of learning and thinking of learners at the middle level of schools, a few questions arose in the mind of the researcher:

1.1.8 Research questions

Question 1: What is the role of brain break embedded mindful art integrated learning in an education

system?

Question 2: How can the brain break embedded mindful art integrated learning be incorporate in the social studies subject at middle level?

Question 3: Is brain break embedded mindful art integrated learning be able to create joyful and constructive environment?

Question 4: Can brain break embedded mindful art integrated learning affect on learners' academic performance?

Question 5: In what ways does brain break embedded mindful art integrated learning affect 8th grade learners' style of learning and thinking?

1.2.0 Statement of the study

This present research problem is stated as "Effectiveness of Brain Break Embedded Mindful Art Integrated Learning (BBEMAIL) on Academic Performance and Style of Learning and Thinking."

1.3.0 Definition of the terms of the study

1.3.1 Brain break learning

"The brain break learning is a simple transitional physical and mental exercise designed to equip the teacher with tools to manage the physiology and attention of the class and to keep children in the most receptive state for learning" **(Weslake & Chritian, 2015, p. 3).**

Operational definition

Brain break learning is a short mental and physical pause from academic work to refresh learners' minds, increase attention, and boost concentration. Stretching exercises, breathing exercises, brief games, and energizing motions can be incorporated into these pauses. Learners can release tension, lower stress, and improve their ability to participate in learning activities by introducing brain breaks into their daily learning regimen.

1.3.2 Mindful technique

"Mindful technique is developing awareness about one's own mind and the present moment; people experience less anxiety, more positive emotions and engagement, and other mental and emotional benefits" **(Weinstein, Brown, & Ryan, 2009)**.

Operational definition

Mindful entails paying attention to the present moment with curiosity, openness, and non-judgment. The implementation of mindful practices in the classroom supports learners' growth in self-awareness, emotional control, and concentration. Guided breathing exercises, mindful walking, body scans, and visualization exercises are a few examples of mindful exercises. These methods can aid learners in becoming more focused, attentive, and open to the learning process.

1.3.3 Art Integration learning

"Art as a subject at all stages, covering all four major spheres, i.e., music, dance, visual arts, and theater, We must bring the arts squarely into the domain of the curriculum, infusing them in all areas of learning while giving them an identity of their own at relevant stages'' **(The NCF, 2005)**.

Operational definition

Art integration is the process of including creative and artistic activities in the curriculum to improve learning. Learners can explore concepts via various modalities, express their thoughts and emotions, and expand their comprehension of the subject matter by incorporating visual arts, music, theater, or dance into academic disciplines. Integration of the arts fosters self-expression, critical thinking, and problem-solving abilities, making learning more interesting and memorable.

1.3.4 Brain break embedded mindful art integrated learning

Operational definition

BBEMAIL is a methodology that incorporates short, mindful art activities within an integrated learning process. This approach allows learners to take short breaks to engage in mindful art practices, which not only refreshes their minds but also reinforces their understanding of various subjects through creative expression. For instance, learners might engage in a mindful drawing exercise to represent scientific concepts or historical events, creating a deeper connection between their artistic expression and academic learning.

1.3.5 Academic Performance

"Academic performance is the knowledge gained, which is assessed by marks by a teacher and educational goals set by students and taught to be achieved over a specific period of time." (Narad. Abdulla.2016).

Operational definition

The evaluation of a learner's performance in a variety of academic subjects is done through academic performance. Classroom performance, graduation rates, and test scores are frequently used by educators to gauge learners' achievement. Education objectives set by learners and teachers to be accomplished over a certain period of time are based on the knowledge gained and are used by teachers to evaluate learners performance in exchange for grades.

1.3.6 Style of learning and thinking (SOLAT)

"The thinking style is the individual's preferred thinking style when doing business and describes how the individual uses or exploits the capacities that he owns, such as knowledge, which is not ability but is located between character and capacities" **(Sternberg, 2001)**.

"Learning styles indicate an individual's preferential focus on different types of information, the different ways of perceiving information, and the rate of understanding information" **(Lohri-Posey, 2003)**.

Operational definition

In this present study, the term "style of learning and thinking" refers to an individual's preferred or characteristic way of acquiring and processing information, solving problems, developing divergent, creative, imaginative, logical concepts, and approaching various tasks and challenges. Learning and thinking styles encompass a range of cognitive and behavioral tendencies that shape how a person absorbs, organizes, prefers class, content, learning, interests, verbal concepts, and utilizes knowledge. These styles can vary from one person to another and can impact how effectively someone learns and communicates.

1.4.0 Objectives of the study

The objectives of this study are given below:

1. To analyze the content of social studies of 8th grade with reference to BBEMAIL.
2. To develop BBEMAIL based teaching learning package of social studies for 8th grade learners.
3. To examine the effect of BBEMAIL on academic performance of 8th grade learners.
4. To examine the effect of BBEMAIL on styles of learning and thinking of 8th grade learners.

1.5.0 Hypotheses of the study

The following hypotheses are formulated in keeping with the objectives of the present study:-

H_a1: There will be a significant effect of Brain Break Embedded Mindful Art Integrated Learning on academic performance of 8th grade learners.

H_a2: There will be a significant effect of Brain Break Embedded Mindful Art Integrated Learning on style of learning and thinking of 8th grade learners.

1.6.0 Delimitations of the study

This study will be delimited in this following ways:

1. This study will be limited to **Agra City** only, as the researcher wants to conduct research on the population of Agra city, therefore the middle school students of Agra city will be selected as sample of the research.

2. This study will be limited to **co-ed schools** only. In this study, both the genders will be given equal importance and the sample size for this study will be easily available in co-ed schools rather than the schools providing education to both the genders separately.

3. This study will be limited to schools affiliated to the **CBSC board**. The strength of middle school students is presumed good enough to select a sample randomly, whereas the good strength of students required for the present study and different sections of a single class is not easily available in schools affiliated to UP board. Moreover, permission for conducting research experiment for a long duration is not allowed in ICSE board schools in Agra city. Therefore, CBSE affiliated schools will be taken into consideration.

4. This study will be limited to middle school learners and the **8th grade** only. In this study, the researcher will exclusively focus upon 8th grade learners among different grades of middle-level because this age group enters the formal stage of Jean Piaget's stages of cognitive development where learners start using their logical and abstract thinking and advances their comprehension ability during 12-14 years of age group.

5. This study will be limited to the specific subject of **Social Studies** only. The researcher has a specialization in Social Studies, and a review of the literature has not found any research conducted taken these variables in relation to Social Studies. The content of Social Studies is found monotonous thus learners do not take interest in studying it, and there is no active participation either. So the

researcher wants to make the content of Social Studies interesting opting this teaching and learning method; **Brain Break Embedded Mindful Art Integrated Learning (BBEMAIL)**.

1.7.0 Research Methodology of the study

In this present study, the research methodology has been stated as follows:

1.7.1 Procedure of the research study

In the present study, the procedure of the research study will be used as follows:

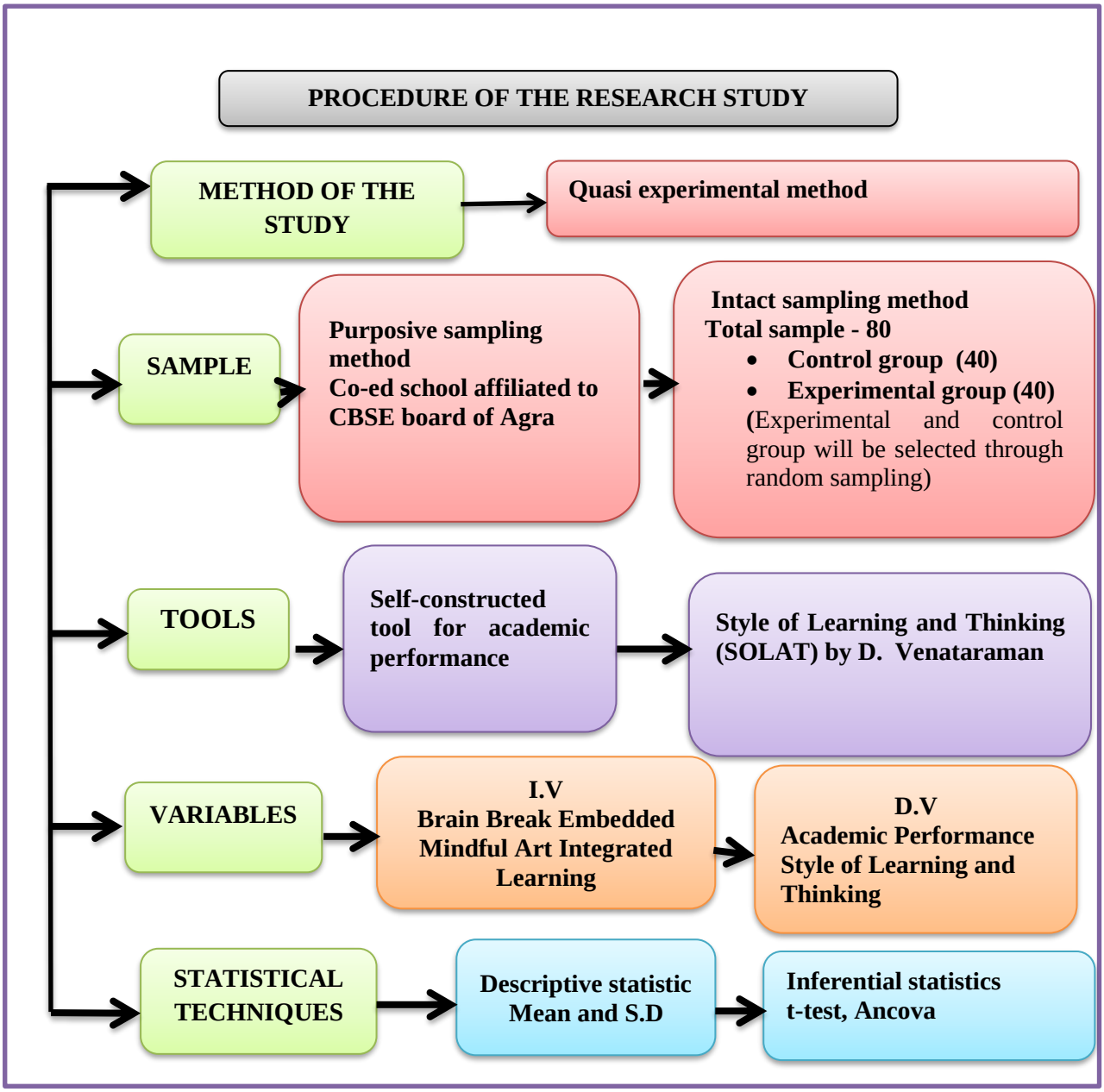

Figure 1.2. Procedure of the research study

1.7.2 Variables of the study

In this present study, these variables are classified as follows:

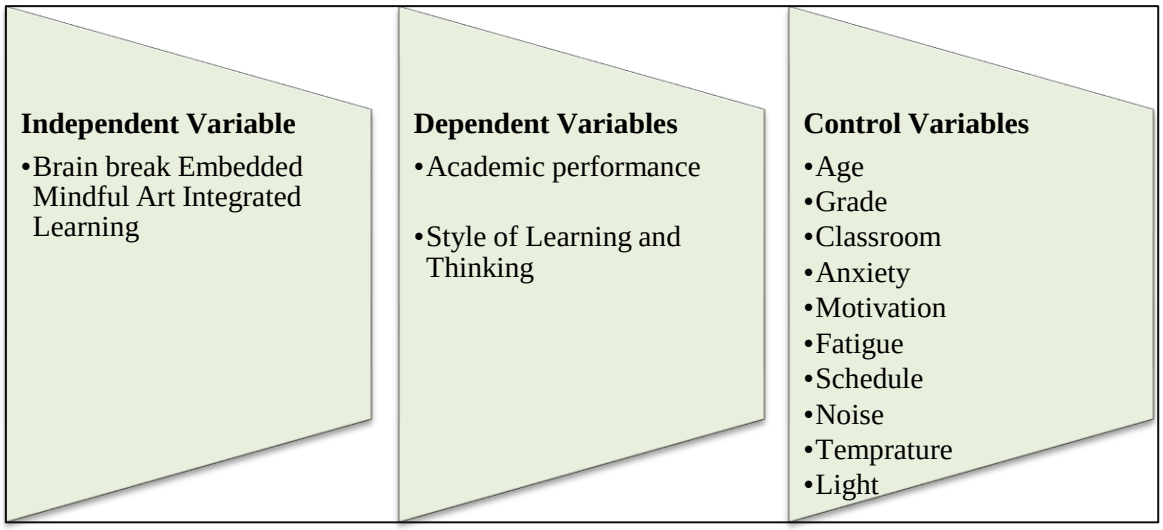

Figure 1.3. Variables of the study

Control variables are essential in quasi-experimental research to ensure that the findings are reliable and can be directly attributed to the intervention or treatment under study rather than to extraneous variables.

In this research, some control variables such as grade, age, classroom, anxiety, motivation, climate, fatigue, schedule, noise, light and temperature will be minimized through various methods on the basis of the nature. The researcher will use the **randomization method** for **subject relevant variables** like grade, age, motivation, and anxiety. Even in quasi-experimental research, perfect randomization is frequently not possible, but some degree of randomization is possible employing random sampling method, which will be used to select the experimental and control groups respectively.

Sequence relevant variables such as time schedule and fatigue will be controlled by providing **counter balancing method**. By providing same time schedule to both the group alternatively, will reduce fatigue. This technique helps to reduce the impact of control variables on both groups and their intervening effect on the outcome of research.

Control of **environmental variables** such as temperature, noise and light will be minimized by providing **similar conditions** to both the groups during the treatment in order to eradicate the impact

of these extraneous variables.

The researcher will statistically control for the impact of variables that cannot be controlled experimentally in this study using techniques like analysis of covariance (ANCOVA) if it would be needed. To lessen their influence on the result, these variables must be included in the study as covariates.

Table 1.1. Methods of control variables

Categories of Control variables	**Control variables**	**Method**
Subject relevant variables	Grade, age, motivation, and anxiety	By opting randomization method
Sequence relevant variables	Time schedule and fatigue	By counter balancing method
Environmental variables	Temperature, noise, light, classroom	By providing similar conditions
To reduce the impact of uncontrolled variables		Statistically using ANCOVA

1.7.3 Sample of the study

In the present study, the researcher will use mixed-method sampling, a combination of non-probability and probability sampling techniques. Co-ed schools affiliated with the CBSE board of Agra City will be selected by the purposive sampling method. 80 students from the CBSE board school in Agra will be selected as the sample for this study. The population of the study will be 8^{th} grade students that will be selected by the purposive sampling method. The experimental group and control group will be selected through a random sampling method. The sections for the control and experimental groups will be assigned by the intact sampling method.

1.7.4 Sampling procedure of the study

In the present study, the sampling procedure will be used as follows:

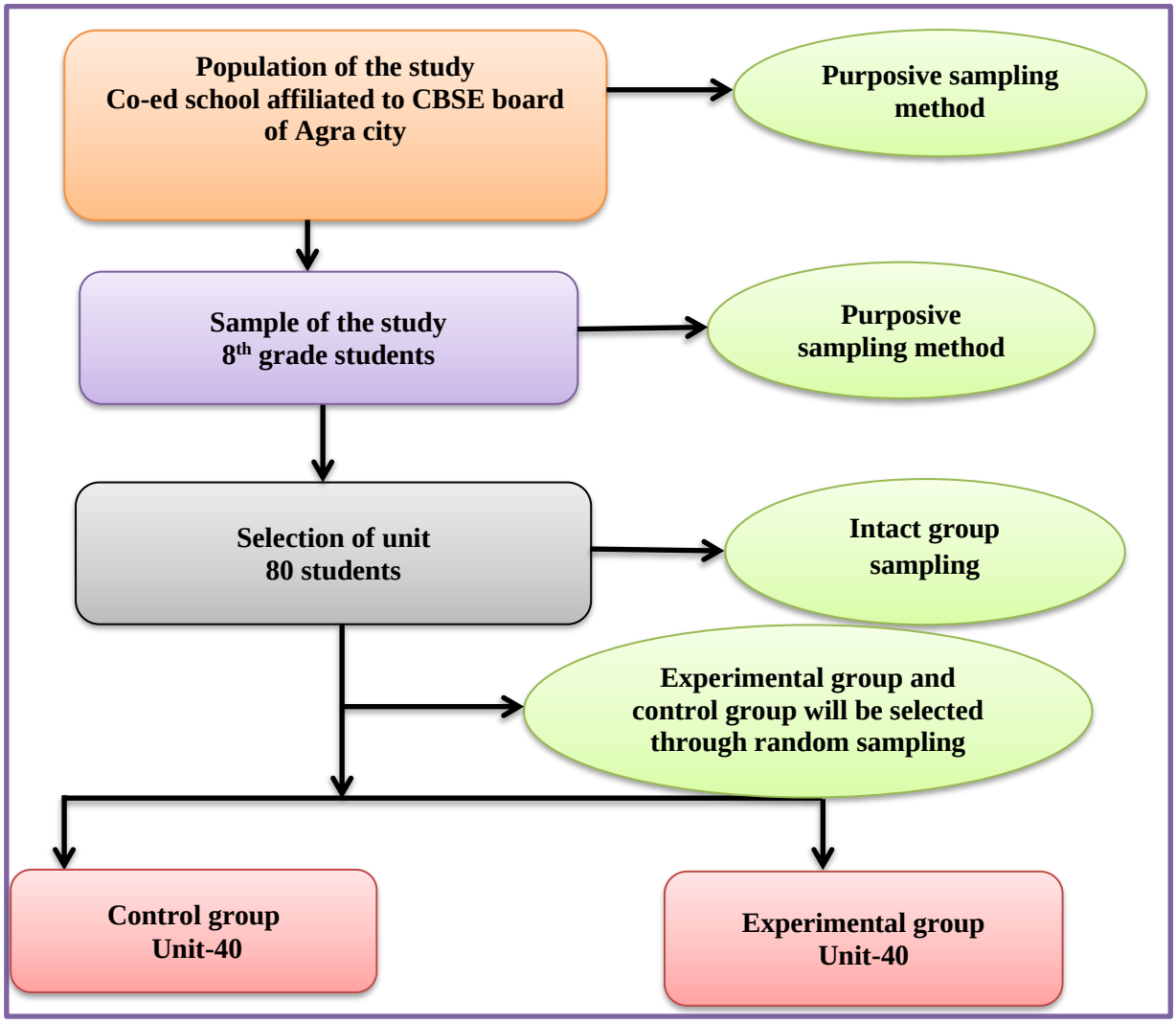

Figure 1.4. Showing the sampling procedure

1.7.5 Research method of the study

A quasi-experimental research method will be employed in the present study, and two group pre-test and post-test designs will be used to study the effectiveness of Brain Break Embedded Mindful Art Integrated Learning on academic performance and style of learning and thinking.

1.7.6 Pre-phase of Intervention program:

In this present study, firstly, the researcher will conduct a content analysis of the social studies text book for 8th grade and select some topics for developing lesson plans based on brain break embedded mindful art integrated learning. After that, experts in this area will check the lesson plans and ensure that lesson plans based on brain break embedded mindful art integrated learning fulfill all objectives

related to this area. With the recommendation of the expert, the researcher will modify the lesson plans based on brain break embedded mindful art integrated learning and prepare the final lesson plan. At last, the researcher will execute the final lesson plan in the classroom.

Some steps in the pre-phase of the intervention program are as follows:

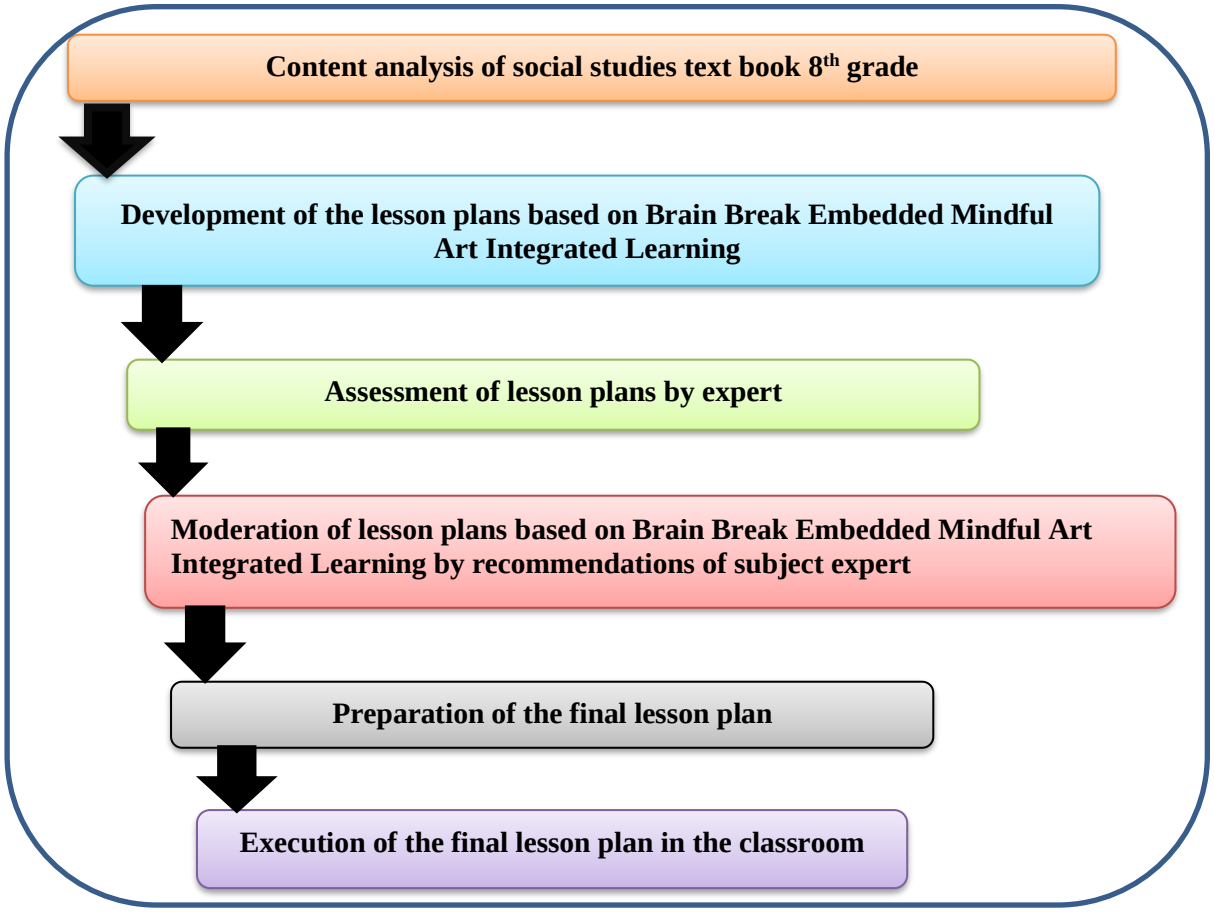
Content analysis of social studies text book 8th grade
Development of the lesson plans based on Brain Break Embedded Mindful Art Integrated Learning
Assessment of lesson plans by expert
Moderation of lesson plans based on Brain Break Embedded Mindful Art Integrated Learning by recommendations of subject expert
Preparation of the final lesson plan
Execution of the final lesson plan in the classroom

Figure 1.5. Pre-phase of Intervention program

1.7.7 Research design and intervention plan of the study

In this present study, the research design will be a two-group non-equivalent pre-test and post-test research design in which the researcher will choose two intact groups, the experimental group and the control group, because randomization of the sample unit will not be possible in these groups and there is less chance of an equivalent group. The intervention plan of the study will be used as follows:

Table 1.2. Intervention plan of the study

Group	Pre-treatment Phase	Implementation Phase		Post-treatment Phase
Experimental Group (Intact Group) N = 40	Administrated of self-constructed test of academic performance and tool of style of learning and thinking on experimental group	**Treatment Phase**	**Hours and period of intervention**	Administrated of self-constructed test of academic performance and tool of style of learning and thinking on experimental group
		Intervention, teaching social studies by Brain Break Embedded Mindful Art Integrated Learning	25 days, 40 minutes per period, 20 lesson plans execute in classroom	
Control Group (Intact Group) N = 40	Administrated of self-constructed test of academic performance and tool of style of learning and thinking on control group	No intervention teaching by conventional method	25 days, 40 minutes per period, 20 lesson plans execute in classroom	Administrated of self-constructed test of academic performance and tool of style of learning and thinking on control group

1.7.8 Tools of the study

In this study, the researcher will select and apply tools before and after the implementation of the intervention during data collection. Tools will be used as follows:

Table 1.3. Tools of the study

SR. NO.	VARIABLES	TOOLS
1.	Academic performance	Self- constructed test
2.	Style of learning and thinking	D.Venataraman Style of learning and thinking (SOLAT)

1.7.9 Statistical techniques of the study

In this study will be used the following statistical techniques for interpret and analyze of the data:-

Descriptive technique:

Mean: In this study, the researcher will use the mean to measure the central tendency of the data.

Standard deviation (SD): The researcher will use the standard deviation to measure the dispersion from the mean of all the data related to all variables.

Inferential technique:

t-test: In this present study, the inferential technique t-test will be used to compare the average of the experimental and control groups.

Ancova: In this present study, Ancova will be used to control the covariant effects of the experimental group and control group.

Graphical representation: A graphic representation of the data will be used to express results and data through graphs and charts.

1.8.0 Significance of the study

In the present time, brain-break embedded mindful art integrated learning would be very essential for the middle stage. Learners are very young; they get disturbed very quickly. To engage in the classroom, it is very essential to give the learners some time to reset their minds, and this is the best way for the learners to burn their extra thoughts and energy. They give themselves some time to reset their brains, and they do something else sometimes to stay focused on the classroom activities and help them retrieve their energy and focus, making it very easy to be attentive to their work. This teaching methodology would improve focus and attention in classroom activities. A teacher gives a regular break in the classroom; it eliminates the stress and anxiety of the learners. It has been established to be effective in enhancing memory retention when we include mindful art integrated activities in teaching and learning. It would be more useful and positive. It would allow the learners to explore the new way of learning and also encourage problem solving in a different way and create new ways of learning. It would improve the overall development and have positive consequences for the academic performance of the learners.

This present research would be the most important in the area of teaching and learning at every stage. The **National Education Policy 2020** specifies the importance of creative thinking, critical thinking, logical thinking, and analytical thinking, which enhance the thinking or learning style and academic performance of the learners. Learners would take a short, valuable break during the period to help upgrade their concentration and attention, decrease fatigue, revitalize their body and mind, and expand their ability, energy, and productivity to focus. Brain break embedded mindful art integrated learning improves creative thinking, critical thinking, logical thinking, and imaginary power and upgrades the academic performance of the learners. This methodology would improve the quality of education and the teaching and learning process for all classes.

Brain breaks and mindful art integrated learning can indeed be essential tools for middle-stage learners in the present time. Young learners often have shorter attention spans and can become easily distracted, so providing them with opportunities to reset their minds and release excess energy is crucial for classroom engagement and attentiveness.

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